



**Preparation of 1,1-disubstituted -1,2,3,4-tetrahydronaphthalene by addition reaction of toluene derivatives with 1,3-butadiene or its derivatives and cyclization.** Sato, Toshio; Takeda, Kyoichi. (Sumikin Kako K. K., Japan). Jpn. Kokai Tokkyo Koho (1997), 8 pp. CODEN: JKXXAF JP 09249584 A2 19970922 Heisei. Patent written in Japanese. Application: JP 96-62744 19960319. CAN 127:278071 AN 1997:632822 CAPLUS (Copyright 2001 ACS)

#### Patent Family Information

<u>Patent No.</u>	<u>Kind</u>	<u>Date</u>	<u>Application No.</u>	<u>Date</u>
JP 09249584	A2	19970922	JP 1996-62744	19960319

#### Abstract

The title compds. [I and II; R1, R2 = H, alkyl, alkoxy, alkoxyalkyl, (un)substituted aryl, aryloxy, aryloxyalkyl; one of R1 and R2 may form a ring which is linked to the carbon atom adjacent to the carbon atom linked to CHR1R2; Z = substituent or arom. fused ring stable under the reaction conditions; n = 0, 1-4; when n ≥ 2, each Z may be same or different to each other; R3, R4 = H, alkyl, alkoxy, alkoxyalkyl, (un)substituted aryl, aryloxy, aryloxyalkyl; when at least one of R1 and R2 = H, at least one of R3 and R4 ≠ H] are prepd. by addn. reaction of arom. compds. having a benzylic hydrogen (III; R1, R2, = same as above; m = 1-5; n = 0, 1-4; m+n ≤ 5; when m, n ≥ 2, each CHR1R2 or Z may be same or different to each other and at least one of the carbon atoms adjacent to the carbon atom linked to at least one CHR1R2 is not substituted ) with butadiene CH2:CR4CR3:CH2 in the presence of an anionic basic addn. catalyst and cyclization of the resulting 1:1 adducts (IV and V; R1 - R4, Z, n = same as above) under heating in the presence of an acid catalyst. These compds. I and II are useful as intermediates for cosmetics, drugs, and agrochems. Thus, Na metal (catalyst) 1.07, K metal (catalyst) 3.73, biphenyl (catalyst aid) 4.4 g, and 200 mL THF were placed in a flask and heated to 60° under stirring, followed by adding 184 g toluene and then dropwise a soln. of 82 g 2-methyl-1,3-butadiene (isoprene) in 200 mL THF over 3 h, and the resulting mixt. was stirred at 60° for 1 h, cooled to 25° and treated with 100 mL H2O to decomp. the catalysts to give, after workup, 166.5 g adducts contg. two adducts as the main components. The latter adducts were autoclaved in the presence of 8.7 g silica alumina catalyst (N-633L, Nikki Chem., Japan) at 170° for 2 h to give 29.8% 1,1-dimethyl-1,2,3,4-tetrahydronaphthalene and 8.4% 1,2-dimethyl-1,2,3,4-tetrahydronaphthalene.